

Example 2

Properties of the molding material

Binder Polymer	Polyetheretherketone (PEEK)
Matrix particles	Aluminumhydroxid (10 μ m)
Matrix particles/Binder Polymer ratio	100:3.125 parts by weight

After 8h of thoroughly mixing of the listed compounds using a barrel mixer a homogeneous composition was obtained. A mold has been made using the above-mentioned composition.

Properties of the mold

Colour	White	
Density [g/cm ³]	2.2	DIN 16945
Flexural strength [N/mm ²]	48.7	ISO 178
Flexural modulus [N/mm ²]	12800	ISO 178
Impact strength [KJ/m ²]	3.4	ISO 179
Tensile strength [N/mm ²]	20.8	ISO 527
Compressive strength [N/mm ²]	74	ISO 604
Heat distortion temperature [°C]	340	ISO R 75 Be
Shore hardness [D]	87	DIN 53505
Air permeability [Nm ³ /h]	1.75	¹⁾
Reduced pressure [bar]	- 0.9	

¹⁾ The air permeability was measured by a compressed air consumption measuring device according to DIN 1952 or DIN 53887.

All measurements have been performed under standardized conditions (room temperature, atmospheric pressure).

Example 3Properties of the molding material

Binder Polymer	Sodium water-glass
Matrix particles	Quartz (5-10 μ m)
Matrix particles/Binder Polymer ratio	100:0.25 parts by weight

After 15 to 30 min of thoroughly mixing of the listed compounds using a barrel mixer a homogeneous composition was obtained. A mold has been made using the above-mentioned composition.

Properties of the mold

Colour	Grey	
Density [g/cm ³]	2.5	DIN 16945
Flexural strength [N/mm ²]	23.7	ISO 178
Flexural modulus [N/mm ²]	24580	ISO 178
Impact strength [KJ/m ²]	2.4	ISO 179
Tensile strength [N/mm ²]	15.3	ISO 527
Compressive strength [N/mm ²]	84	ISO 604
Heat distortion temperature [°C]	900	ISO R 75 Be
Rockwell hardness [HRA]	87	DIN 53505
Air permeability [Nm ³ /h]	1.88	¹⁾
Reduced pressure [bar]	- 0.72	

¹⁾ The air permeability was measured by a compressed air consumption measuring device according to DIN 1952 or DIN 53887. All measurements have been performed under standardized conditions (room temperature, atmospheric pressure).

The foregoing description has been directed to particular embodiments of the invention in accordance with requirements of the Patent Statutes for the purposes of illustration and explanation. It will be apparent, however, to those skilled in the art, that many modifications, changes and variations in the claims embodiments will be possible without departing from the scope and spirit of the claimed invention. It is intended that the following claims be interpreted to embrace all such modifications and changes.